

# DENON

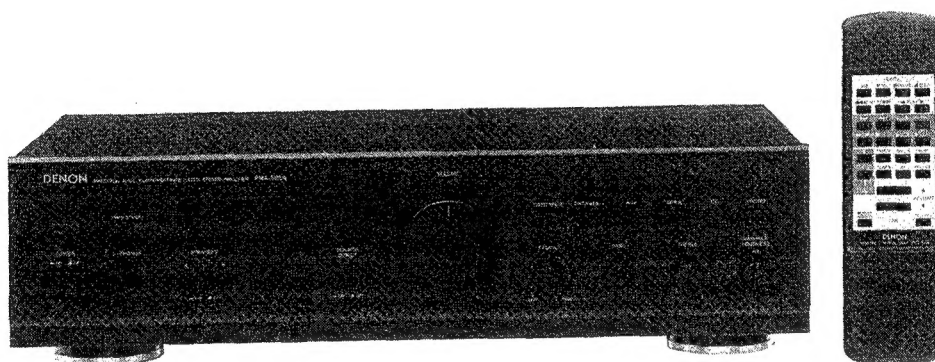
SMPMA525R - Z16  
S.MANUAL PMA525R  
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Hi-Fi Integrated Stereo Amplifier

## SERVICE MANUAL

# MODEL PMA-525R

### INTEGRATED STEREO AMPLIFIER



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## NIPPON COLUMBIA CO., LTD.

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

FOR U.S.A. & CANADA MODEL ONLY

**CAUTION**

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

- POUR LE MODELE CANADIEN UNIQUEMENT

## ATTENTION


POUR PREVENIR LES CHOCX ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT

• NUR FÜR EUROPÄISCHE MODELLE

### Konformitätserklärung

Die DENON Electronic GmbH  
Halskestraße 32  
40880 Ratingen



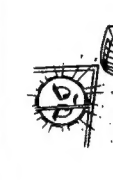
Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Resin Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A.  An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Power-Cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or run over by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
12. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
13. **Power Lines** – An outdoor antenna should be located away from power lines.
14. **Outdoor Antenna Grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the lead-in and supporting structure, grounding of the mast and supporting structure, discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
15. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the appliance; or
  - C. The appliance has been exposed to rain; or
  - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - E. The appliance has been dropped, or the enclosure damaged.
18. **Service** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



A perspective diagram of a radio receiver setup. A rectangular box represents the radio receiver, with the label "RADIO RECEIVER" on its front face. A horizontal wire, labeled "ANTENNA WIRE", extends from the top of the receiver to the left. This wire is supported by a vertical "GROUND CLAMP" on the left and a "PULLEY" on the right. The wire passes over the pulley and then runs horizontally to the right, where it is connected to a "PUSH-TO-MAKE SWITCH". Below the switch is a "POWER SOURCE (BATTERY)". The antenna wire continues from the switch, runs horizontally, and then turns vertically down to a "GROUND CLAMP" on the right. Labels with leader lines point to the "PULLEY", "ANTENNA WIRE", "PUSH-TO-MAKE SWITCH", "POWER SOURCE (BATTERY)", "GROUND CLAMP", and "RADIO RECEIVER".

# NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION NOTE SUIV'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA OBSERVAÇÕES QUANTO AO USO

		
<p>Do not let foreign objects in the set. • Keine fremden Gegenstände in das Gerät kommen lassen. • Ne pas laisser des objets étrangers dans l'appareil. • È importante che nessun oggetto è inserito all'interno dell'unità. • No debe objetos extraños dentro del aparato. • Laagden vreemde voorwerpen in dit apparaat vallen. • Se till att främmande föremål inte tränger in i apparaten. • Não deve objetos estranhos no aparelho.</p>	<p>Keep the set free from moisture, water, and dust. • Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern. • Protéger l'appareil contre l'humidité, l'eau et la poussière. • Mantenga el equipo libre de humedad, agua y polvo. • Laat geen vochtigheid, water of stof in het apparaat vallen. • Usett inte apparaten för fukt, vatten och damm. • Manisha o aparelho livre de qualquer umidade, água ou pó.</p>	<p>Unplug the power cord when not using the set for long periods of time. • Zieh das Gerät aus der Steckdose aus, wenn es längere Zeit nicht verwendet wird. • Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes. • Desconecte el cordón de alimentación cuando no utilice el equipo por mucho tiempo. • Neem altijd het netkabel uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt. • Kopla u räkabein om apparaten inte kommer att användas i lång tid. • Desligue o fio condutor de força quando o aparelho não for usado por um longo período.</p>
<p>Do not let insecticides, benzene, and thinner come in contact with the set. • Besser Sie das Gerät nicht mit Insektiziden, Benzin oder Lösungsmitteln in Berührung kommen lassen. • Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil. • È importante che nessun insetticida, benzina o solvente entri in contatto con l'appareil. • No permita el contacto de insecticidas, gasolina y diluyentes con el equipo. • Laat geen insecticide, benzine of oplosmiddel in contact met het apparaat. • Se till att inte insektsmedel på spraybult, bensin eller lösningsmedel kommer i kontakt med apparaten. • Não permita que inseticidas, benzina e solventes entrem em contato com o aparelho.</p>	<p>Do not obstruct the ventilation holes. • Die Belüftungslöcher dürfen nicht verdeckt werden. • Ne pas obstruer les trous d'aération. • Non coprire i fori di ventilazione. • Não obstrua as aberturas de ventilação. • De ventilatieopeningen mogen niet worden beblokkeerd. • Tapp inte till ventilationsöppningarna. • Não obstrua os orifícios de ventilação.</p>	<p>Handle the power cord carefully. • Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen. • Manipuler le cordon d'alimentation avec précaution. • Maneje o fio de alimentação com cuidado. • Mantenha o cabo da alimentação firme para a spine quando scollegare il cavo dell'alimentazione. • Sostenga el cordón de energía cuando desconecte el cordón de energía. • Houid het snoer bij de stekker vast wanneer deze moet worden aan- of losgemaakt. • Hantea valakabin varsam! • Håll i kabeln när den kopplas från el-nätet. • Manipule com cuidado o fio condutor de energia. • Segure a tomada ao desconectar o fio.</p>

## NOTE:

1. Mantenga siempre activado el interruptor de alimentación (POWER) en la unidad principal.
2. Cuando el equipo desde la unidad de control remoto.
3. Cuando la unidad vaya a estar fuera de uso por un período prolongado de tiempo, desconecte el cable de alimentación.

**PRECAUTION:**  
Cuando solo el indicador LED de silenciamiento/modo de espera esté encendido, el equipo puede estar en silencio. Si se quiere que la unidad principal emita sonido, presione el botón de silencio en la unidad. Si la unidad ha sido desconectada desde la unidad de control remoto, conecte la alimentación desde la unidad de control remoto.

**OPMERKING:**  
1. Zorg altijd voor dat de afstandsbediening (POWER) van het hoofdtelefoon in de ingeschakelde stand staat.  
2. Schakel de stroom in en uit m.b.v. de afstandsbediening.  
3. Trek het netkabel uit wanneer u denkt het toestel gedurende een lange periode niet te gebruiken.

**WAARSCHUWING:**  
Indien enkel de dimmings-/MUTE/STANDBY LED brandt, betekent dit dat de spanning met de afstandsbediening is uitgeschakeld. Schakel de spanning in met de afstandsbediening.

**OBSERVAÇÃO:**  
1. Lâti aliid strömbräaren (POWER) på huvudentheten vara påslagen.  
2. Slå till/från strömmen med hjälp av fjärrkontrollen.  
3. Koppla loss nätkabeln om apparaten inte skall användas under lång tid.

**AVVERTIMENTO:**  
Quando solo l'indicatore LED di silenziamento/attesa (MUTE/STANDBY) è illuminato, l'appareil può essere in silenzio. Se si vuole che l'unità principale emetta suono, premere il tasto di silenzio sull'unità. Se l'unità è stata disconnessa dalla unità di controllo remoto, collegare l'alimentazione dalla unità di controllo remoto.

**CAUTION:**  
Se apenas se iluminar o LED de silêncio/espera (MUTE/STANDBY), isto significa que a força se desligou a partir do controle remoto. Ligue a força a partir do controle remoto.

**NOTA:**  
1. Manisha o interruptor de Corrente (POWER) na unidade principal sempre ligado.  
2. Desligue a corrente a partir da unidade de controle remoto.  
3. Desconecte o fio de força quando intender não utilizar a unidade por longo tempo.

**PRECAUCIONES PARA LA INSTALACION**  
Deje por lo menos 10 cm. de espacio entre esta unidad y cualquier otro componente situado sobre ella.

**VOORZORGSMAAATREGELEN**  
Bij plaatsing dient u een ruimte van minstens 10 cm open te laten tussen dit toestel en een ander elop geplaatst component.

**FÖRSIKTIGHETSÅTGÄRDER VID INSTALLATIONEN**  
Se till att det finns minst 10 cm mellanrum mellan apparaten och en ev. annan apparat som ställs ovanpå.

**CUIDADOS NA INSTALACAO**  
Deixe um espaço de pelo menos 10 cm entre esta unidade e qualquer outro componente colocado acima.



## NOTE:

1. Always keep the POWER switch on the main unit turned on.
2. Turn the power on and off from the remote control unit.
3. When the unit is to be out of use for a long period of time.

**CAUTION:**  
If only the MUTE/STANDBY LED is lit, this means that the power is turned off from the remote control unit. Turn the power on from the remote control unit.

**HINWEIS:**  
1. Lassen Sie den Netzschalter (POWER) am Hauptgerät stets eingeschaltet.  
2. Schalten Sie den Strom mit dem Fernbedienungsgerät ein/aus.  
3. Trennen Sie das Netzab mit dem Netz ab, wenn Sie beabsichtigen, das Gerät über einen längeren Zeitraum hinweg nicht zu benutzen.

**VORSICHT:**  
Wenn nur das Stummzeichen-/Ruhe-/Standby-LED (MUTE/STANDBY) leuchtet, bedeutet dies, dass die Stromversorgung aus der Fernbedienung ausgeschaltet worden ist. Schalten Sie den Strom vom Fernbedienungsgerät aus ein.

**REMARQUE:**  
1. Si seul le témoin (LED) de sourdine/veille (MUTE/STANDBY) est allumé, cela signifie que l'appareil est mis hors circuit par la télécommande. Allumez l'appareil avec la télécommande.

**ATTENTION:**  
Si seul le témoin (LED) de sourdine/veille (MUTE/STANDBY) est allumé, cela signifie que l'appareil est mis hors circuit par la télécommande. Allumez l'appareil avec la télécommande.

**NOTA:**  
1. Tenete sempre l'interruttore della corrente (POWER) dell'unità principale nella posizione di attivazione.  
2. Accendete e spegnete la corrente usando il telecomando.  
3. Scollegate il filo di alimentazione quando avrete intenzione di non usare l'apparecchio per un lungo periodo.

**AVVERTIMENTO:**  
Se sono illuminati solo i LED di attenuazione/attesa (MUTE/STANDBY), questo significa che la corrente è stata spenta con il telecomando. Riaccendete la corrente usando il telecomando.

**PRECAUTIONS FOR INSTALLATION**  
Leave at least 10cm of space between this unit and any other component placed above.

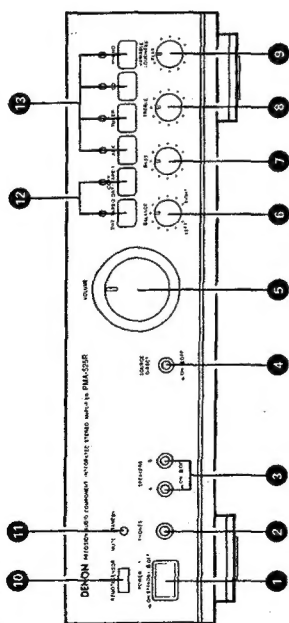
**SICHERHEITSMASSNAHMEN BEIM EINBAU**  
Lassen einen Mindestabstand von 10 cm zwischen diesem Gerät und der anderen Komponente, die darübergestellt wird.

**PRECAUTIONS D'INSTALLATION**  
Prévoir un espace d'au moins 10cm entre l'unité et tout autre appareil se trouvant au-dessus.

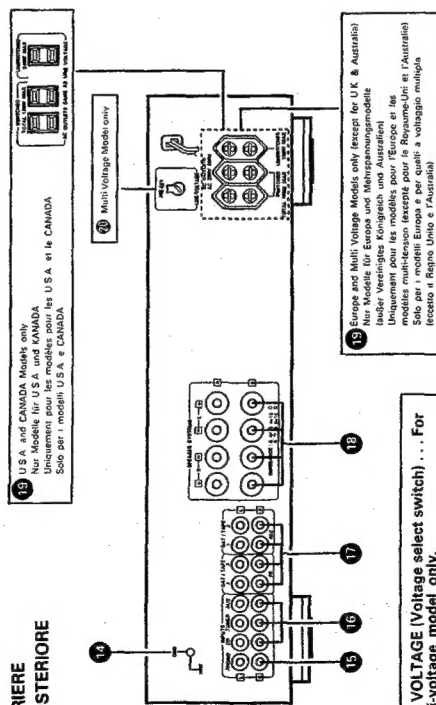
**PRECAUZIONI PER L'INSTALLAZIONE**  
Lasciate uno spazio libero di almeno 10 cm fra quest'unità e qualsiasi altro componente che è collocato sopra la stessa.



FRONT PANEL  
FRONTPLATTE  
PANNEAU AVANT  
PANNELLO ANTERIORE



REAR PANEL  
RÜCKWAND  
PANNEAU ARRIERE  
PANNELLO POSTERIORE



**LINE VOLTAGE (Voltage select switch) ... For Multi-voltage model only.**  
The desired voltage may be set with the VOLTAGE SELECTOR KNOB on the back panel using a screwdriver. Do not twist the VOLTAGE SELECTOR KNOB with excessive force. It may be damaged. If the voltage select switch does not turn smoothly, see qualified serviceman.

Fig. 1  
Abb. 1

1 GND	2 PHONO	3 CD, TUNER, AUX	4 DAT/TAPE-1, DAT/TAPE-2, TAPE PB, TAP REC	5 SPEAKERS
GND	Phono Input Terminals (Phono)	Input Terminals (CD, TUNER, AUX)	Playback and Recording Terminals (DAT/TAPE-1, DAT/TAPE-2, TAPE PB, TAP REC)	Speaker Terminals
GND	Schallplatten-/Eingangsbuchsen (Phono)	Eingangsbuchsen (CD, TUNER, AUX)	Wiedergabe- und Aufzeichnungsbuchsen (DAT/TAPE-1, DAT/TAPE-2, TAPE PB, TAP REC)	Lautsprecher-anschlüsse
GND	Bornes d'entrée (Phono)	Bornes d'entrée (CD, TUNER, AUX)	Bornes de lecture et d'enregistrement (DAT/TAPE-1, DAT/TAPE-2, TAPE PB, TAP REC)	Bornes de haut-parleurs
GND	Terminali di ingresso (Phono)	Terminali di ingresso (CD, TUNER, AUX)	Terminali di riproduzione e registrazione (DAT/TAPE-1, DAT/TAPE-2, TAPE PB, TAP REC)	Terminali degli altoparlanti

CONNECTIONS  
ANSCHLÜSSE  
CONNEXIONS  
CONNESSIONI

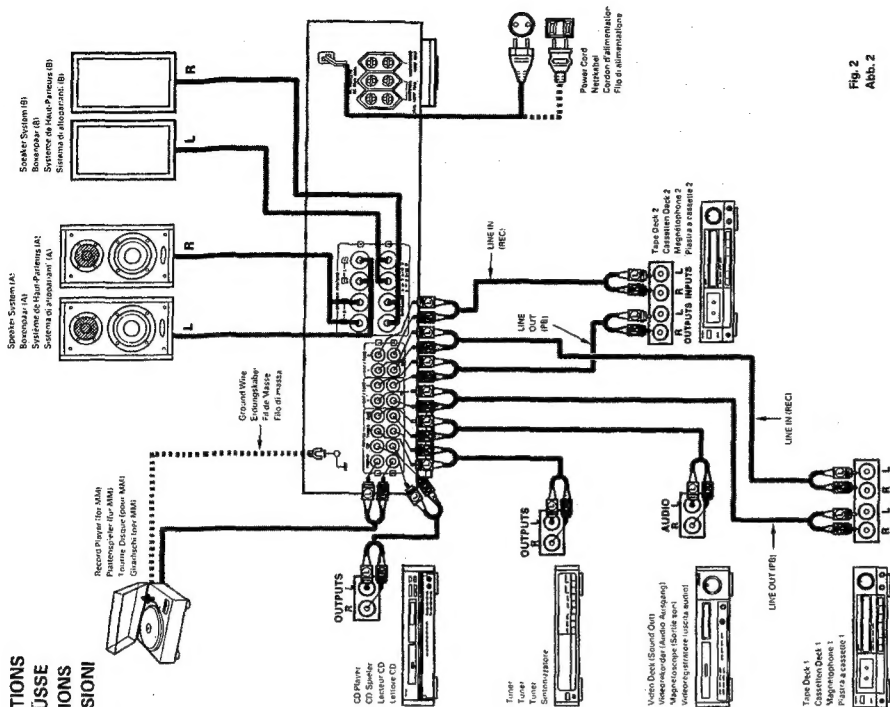


Fig. 2  
Abb. 2

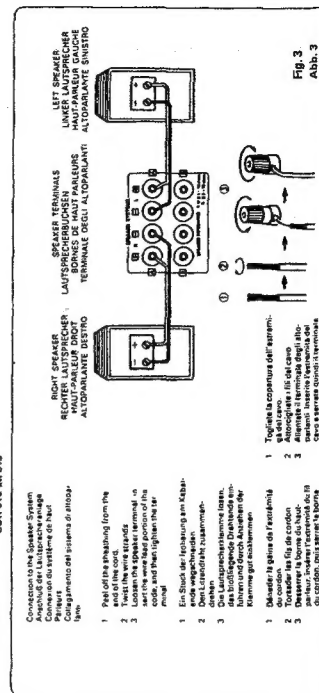


Fig. 3  
Abb. 3

## DESIGNATIONS AND FUNCTIONS OF PANEL CONTROLS

- ① **POWER (Power Switch)**  
When the power switch is turned ON (—), the MUTE/STANDBY LED (●) lights.  
When the power switch is turned ON, power is supplied to the unit. It takes a few seconds after the power is turned on for the unit to warm up. This is due to the built-in muting circuit that eliminates noise during the on/off operation.
- ② **PHONES (Headphone Jack)**  
This jack is used to plug in the headphones.
- ③ **SPEAKERS (Speaker Selection Switch)**  
The PMA-525R can be connected to two speaker systems: speaker system A and speaker system B.  
When A is pressed, the speaker system connected to speaker output terminals A operates.  
When B is pressed, the speaker system connected to speaker output terminals B operates.  
When A and B are pressed on together, both speaker systems operate simultaneously. When the A and B switches are both off (in the out position), there is no output from the speaker terminals. This setting is used to listen to playback through the headphones.
- ④ **SOURCE DIRECT (Source Direct Switch)**  
The controls (BALANCE, VARIABLE LOUDNESS, and TONE) can be used when this switch is in the OFF (■) position.  
When set to the ON (—) position, the above controls are by-passed and the signals are input directly to the volume control circuit, providing high quality sound.
- ⑤ **VOLUME (Volume Control)**  
This knob controls the overall volume level.  
Turn the knob to the right (↗) to raise the volume and to the left (↖) to lower it.
- ⑥ **BALANCE (Balance Control)**  
This knob is used to adjust the balance between the left and right channels. When it is set to the center position, the amplitude of the amplifier is equal on both sides. If there is a difference in the left and right channel output voltages for a cartridge, move the knob to the left and the right to adjust it. If the volume on the right side is too low, turn the knob to the right (↗). If the volume on the left side is too low, turn the knob to the left (↖). This will achieve an even balance on the left and right sides.
- ⑦ **BASS (Bass Control)**  
This knob is used to control the bass quality of the sound.  
When the knob is set at the center position, the frequency characteristics are flattened in the range below 1000 Hz. The bass is emphasized as the knob is moved off center to the right (↗), and reduced as it is moved to the left (↖).
- ⑧ **TREBLE (Treble Control)**  
This knob is used to control the treble quality of the sound.  
When the knob is set at the center position, the frequency characteristics are flattened in the range above 1000 Hz. The treble is emphasized as the knob is moved off center to the right (↗), and reduced as it is moved to the left (↖).
- ⑨ **VARIABLE LOUDNESS (Loudness Control)**  
At low volumes, the human ear is less sensitive to low (BASS) and high (TREBLE) frequencies. Use this control to compensate for this deficiency when listening at low volume levels. Turn this control counter-clockwise until a natural balance of bass and treble sound has been restored.
- ⑩ **REMOTE SENSOR (Remote Control Sensor)**  
This sensor receives the infra-red light transmitted from the wireless remote control unit.  
For remote control, point the wireless remote control unit towards the sensor.
- ⑪ **MUTE/STANDBY LED**  
This LED flashes while the muting circuit is activated when the power is turned on and when muting is turned on from the remote control unit, and remains lit (without flashing) while the power is on. In addition, this LED flashes rapidly when the protection circuit is activated.
- ⑫ **TAPE SELECTOR (Tape Selector/Monitor Buttons)**
  - COPY/DAT/TAPE-1:  
Press this button once. COPY/DAT/TAPE-1 indicator will light up and then you can play tape source on DAT/TAPE-1 terminal. In this state you can copy COPY/DAT/TAPE-1 source to DAT/TAPE-2 terminal. Press again the button currently accessed, to play sources selected by input selector (●). Indicator goes out.
  - DAT/TAPE-2:  
Press this button once. DAT/TAPE-2 indicator will light up and then you can play tape or video source of DAT/TAPE-2 terminal. Press again the button currently accessed, to play sources selected by input selector (●). Indicator goes out.
- ⑬ **INPUT SELECTOR (Input Select Switch)**  
Use these to select the program source.  
When the switch for the desired program source is selected, its LED lights. One program source only can be selected at a time, as follows:
  - PHONO: Use this position when using the record player connected to the PHONO jacks. The record player should have an "MM" cartridge.
  - CD: Use this position when using the CD player, etc., connected to the CD jacks.
  - TUNER: Use this position when using the tuner, etc., connected to the TUNER jacks.
  - AUX: Use this position when using the component connected to the AUX jacks.

## ⑬ AC OUTLETS: Rear Panel Side.

- For U.S.A., Canada and Multi-voltage models.  
AC outlets are used for connecting amplifier component units, such as tuner, turntable, tape deck, etc.
- SWITCHED (Total capacity: 120 W):  
These outlets are turned ON/OFF when main power switch and POWER button on the Remote Control Unit is turned on/off.
- UNSWITCHED (Capacity: 240 W)  
This outlet is always ON whether power switch is on or OFF.
- For Europe model, except the U.K. and Australia models.  
AC outlets are used for connecting amplifier component units, such as tuner, turntable, tape deck, etc.
- SWITCHED (Total capacity: 100 W):  
These outlets are turned ON/OFF when main power switch and POWER button on the Remote Control Unit is turned on/off.
- UNSWITCHED (Capacity: 100 W)  
This outlet is always ON whether power switch is on or OFF.

## OPERATION

## PREPARATION

## 1. CHECKING CONNECTIONS

- Make sure that all the connections are proper by referring to the back panel. (Fig. 2~3)
- Check the polarity (positive and negative) of connections, and the directivity of stereo separation (right cord to right channel terminal, and left cord to left channel terminal).
- Check the directivity of pin cord connection.

## 2. SETTING OF EACH KNOB

- Turn the volume knob (●) counterclockwise, to left.
  - Set the rotary knob to "flat" or "center position".
  - Set SOURCE DIRECT (●) to "OFF (■)".
  - Press the TAPE MONITOR switch (●) to turn the LED off.
  - Turn on the speaker selection switch for desired speaker system (A or B).
- After checking the above items, turn on the power, the amplifier is set in the ready mode in a few seconds.

## PLAYING A RECORD

1. Set the INPUT SELECTOR switch (●) to "PHONO".
2. Operate the turntable and play the record.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

## PLAYBACK OF CD PLAYER

1. Set the INPUT SELECTOR switch (●) to "CD".
2. Operate the CD player.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

## RECEPTION OF RADIO PROGRAMS

1. Set the INPUT SELECTOR switch (●) to "TUNER".
2. Operate the tuner to receive a radio program.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

## CONNECTIONS OF AUDIO EQUIPMENT TO AUX TERMINALS

1. Set the INPUT SELECTOR switch (●) to "AUX" Position.
2. Operate the Audio equipment Systems.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

## PLAYBACK WITH TAPE DECK

1. Set the TAPE MONITOR switch (●) to "COPY/DAT/TAPE-1" or "DAT/TAPE-2".
2. Operate the Tape Deck.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

## RECORDING WITH TAPE DECK

The source to be recorded is selected by the INPUT SELECTOR switch (●).

## COPYING FROM ONE TAPE TO ANOTHER

To copy from COPY/DAT/TAPE-1 to DAT/TAPE-2, press the COPY/DAT/TAPE-1 switch (●).

**NOTE:**  
Copying is not possible from DAT/TAPE-2 to COPY/DAT/TAPE-1.

## MONITORING THE RECORDING

(If a 3-head tape deck is used, the sound being recorded can be monitored during the recording.)  
Use the TAPE MONITOR switches (●) to select the tape deck onto which the sound is being recorded.  
The LED for the selected tape deck lights.

## CAUTION

## Protective Circuit

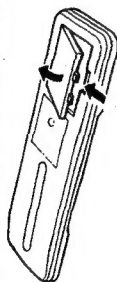
This set is equipped with a high speed protective circuit. This circuit protects the internal circuitry from damage due to large currents flowing when the speaker jacks are not completely connected or when an output is generated by a short circuit. This protective circuit's operation cuts off the output to the speakers. In such a case, be sure to turn the power to the set off and check the connections to the speakers. Then turn the power on again. After muting for a few seconds, the set will operate normally.

## REMOTE CONTROL OPERATION

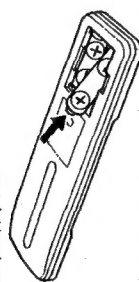
The accessory Remote Control Unit is used to control the amplifier from a convenient distance.

### (1) Inserting the Dry Cell Batteries

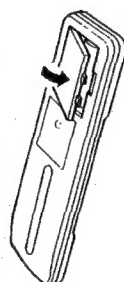
1. Remove the battery cover on the Remote Control Unit.



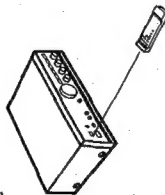
2. Insert two dry cell batteries as shown in the diagram on the battery supply unit.



3. Replace the battery cover.



### (2) Directions for use



#### Note on operation

- Do not press the operating buttons on the Amplifier and the Remote Control Unit at the same time. This will cause misoperation.
- Operation of the Remote Control Unit will become less effective or erratic if the Infrared Remote Control Sensor on the Amplifier is exposed to strong light or if there are obstructions between the Remote Control Unit and the sensor.
- In case you operate a VCR, TV or other components by remote control, do not operate buttons on two different remote control units at the same time. This will cause misoperation.

Besides being able to operate the PMA-525R amplifier with this Remote Control Unit, you can also operate a DENON cassette deck and CD player from this handy full-system Remote Control Unit.

#### Remote control section

##### Full-system Remote Control Unit

The full-system Remote Control Unit operates all major functions of the Amplifier, such as function switching, volume control. But that's not all! The same control pad can also control the major functions of a DENON CD player and cassette deck and tuner when combined with the PMA-525R to create a remarkably ergonomic and versatile DENON system with all the quality sound reproduction that the devoted audiophile expects.

## Remote Control Unit RC-176 supplied with the PMA-525R

### 1 POWER button

This button can be used to turn on and off the power of the amplifier. However, the power for the amplifier turned on and off if it is in the power standby mode and the power cord is plugged in.

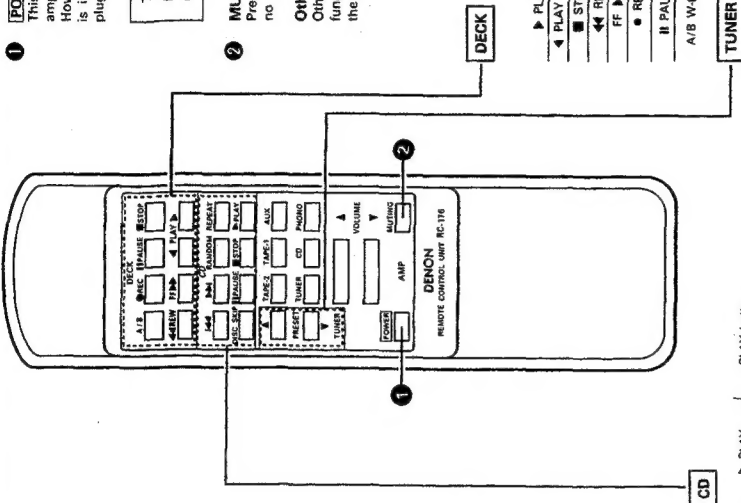
This button will not function if there is a power failure, if the power cord is not plugged in, or when using an auto timer.

### 2 MUTE button

Pressing this switch will activate the muting condition and no signals will be output to the speakers.

### Other buttons

Other buttons are exclusively for the PMA-525R, and function in the same way as the corresponding buttons on the set.



### PRESET buttons

Press this button to move up or down among the preset station numbers.

▶ PLAY button	▶ PLAY button
■ STOP button	▶ PLAY (REV) button
◀◀ Reverse Track Search button	▶ STOP button
▶▶ Forward Track Search button	◀◀ REW button
Refer to the operating instructions of your DENON CD player	▶▶ FF button
■ PAUSE button	● REC button
	Refer to the operating instructions of your DENON tape deck
	■ PAUSE button
	A/B DECK button
	SELECT button

The RC-176 Remote Control Unit can control CD players and cassette decks manufactured by DENON.

- Note that operation may not be possible for some models.
- Buttons are conveniently separated into groups, each group controlling one specific component. The groups are AMP, FUNCTION, CD, DECK and TUNER etc.

For details on operating other components, refer to the operating instructions for the CD player and/or cassette deck.

#### CAUTION:

- If the power is turned off with the Remote Control Unit, the set is switched to the power stand-by state. If you are absent for a long period of time, unplug the power cord.
- Only the MUTE/STANDBY LED lights when in the power stand-by mode.
- You may experience erratic operation of the Remote Control Unit if it is operated in fluorescent light and direct sunlight. In particular if this light strikes the Remote Control Sensor on the Amplifier. However, this is not a malfunction, and if this should happen, simply protect the sensor against such light.



ENGLISH	
Please check to make sure the following items are included with the main unit in the carton:	
(1) Operating Instructions	1
(2) Remote Control Unit (RC-176)	1
(3) Batteries R6P (AA)	2
DEUTSCH	
Bitte überprüfen Sie, ob die folgenden Teile vollständig in der Verpackung enthalten sind:	
(1) Bedienungsanleitung	1
(2) Fernbedienung (RC-176)	1
(3) Batterien vom Typ R6P (AA)	2
FRANCAIS	
Veuillez contrôler que les articles suivants sont bien joints à l'appareil principal dans le carton:	
(1) Mode d'emploi	1
(2) Unité de télécommande (RC-176)	1
(3) Piles R6P (AA)	2
ITALIANO	
Controllare che le parti seguenti si trovino imballate con l'apparecchio nella scatola di spedizione:	
(1) Libretto delle istruzioni	1
(2) Telecomando (RC-176)	1
(3) Batterie R6P (AA)	2
ESPAÑOL	
Por favor verifique asegurándose de que los siguientes artículos son empacados en la caja pero separados de la unidad principal:	
(1) Manual de instrucciones	1
(2) Unidad de control remoto (RC-176)	1
(3) Pilas R6P (AA)	2
NEDERLANDS	
Controleer of de volgende accessoires bij het hoofdtoestel in de doos zijn verpakt:	
(1) Gebruiksaanwijzing	1
(2) Afstandsbediening (RC-176)	1
(3) Batterijen R6P (AA)	2
SVENSKA	
Kontrollera att följande, förutom huvudapparaten, finns med i kartongen:	
(1) Bruksanvisning	1
(2) Fjärrkontroll (RC-176)	1
(3) Batterier R6P (AA)	2
PORTUGUÊS	
Certifique-se de que as seguintes peças estão incluídas na embalagem fora da unidade principal:	
(1) Instruções de operação	1
(2) Unidade de controle remoto (RC-176)	1
(3) Baterias R6P (AA)	2

Technical Data (typical value)	Technical Data (typical value)	Características técnicas (valor característico)
<b>SECTION 1: POWER AMPLIFIER</b> <b>Non-Amp Output Power:</b> (8 Ω/ohms Load) T.H.D. 0.08% (4 Ω/ohms Load) T.H.D. 0.7% (2 Ω/ohms Load) T.H.D. 0.7% *Continuous 52W per channel min into 8 Ω/ohms from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion. <b>Total Harmonic Distortion:</b> 8 Ω/ohms 20 Hz to 20 kHz 0.08% <b>PRE-AMPLIFIER SECTION</b> <b>Rated Output:</b> (Recut Terminal) Input Sensitivity/ Input Impedance: The value in parentheses ( ) is given in parentheses when SOURCE DIRECT is ON. PHONO: CD, TUNER, AUX TAPE-1, TAPE-2 RIAA Deviation: PHONO: Within ±0.5 dB Maximum Input: 150 mV/75 kΩ/ohms 150 mV/25 kΩ/ohms 20 Hz ~ 20 kHz PHONO 160 mV/11 kHz <b>OVERALL CHARACTERISTICS</b> <b>SN Ratio (JHF A Network):</b> (input terminals short-circuited) SOURCE-DIRECT: ON Tone Control Adjustable Range: BASS TREBLE Variable Loudness: <b>OTHERS</b> Power Supply	<b>SECTION 2: REMOTE CONTROL UNIT</b> <b>Remote control system:</b> Infrared control system Power supply: 3V DC, Two size R6P ("AA") 100 g (about 3.5 oz) Dimensions: 55(W) x 194(H) x 16(D) mm (5.5" x 7.6" x 1.6") (including batteries)	<b>PARTIE AMPLIFICATEUR</b> <b>Non-Amp Output Power:</b> (charge 8 Ω/ohms) (charge 4 Ω/ohms) (charge 2 Ω/ohms) T.H.D. 0.08% T.H.D. 0.7% T.H.D. 0.7% *52W en continu par canal sur min. 8 Ω/ohms de 20 Hz à 20 kHz avec une distorsion harmonique totale de 0.08% ou moins. <b>Distorsion harmonique totale:</b> 8 Ω/ohms 20 Hz à 20 kHz 0.08% <b>PRE-AMPLI</b> <b>Puissance nominale:</b> (Borne de sortie d'enregistrement) Sensibilité d'entrée/ Impédance d'entrée: La valeur entre parenthèses ( ) est donnée entre parenthèses lorsque la touche de source directe (SOURCE DIRECT) est sur le bouton ON. PHONO: CD, TUNER, AUX TAPE-1, TAPE-2 Variation RIAA: PHONO: Dans ±0.5 dB Entrée max.: 150 mV/75 kΩ/ohms 150 mV/25 kΩ/ohms 20 Hz ~ 20 kHz PHONO 160 mV/11 kHz <b>CARACTERISTIQUES GENERALES</b> <b>Rapport signal/bruit</b> (Entrées court-circuitées) (Bornes d'entrée court-circuitées) SOURCE DIRECT: ON Gamme de réglage de tonalité: GRAVES AIGUES Commande de compensation physiologique: <b>AUTRES</b> Alimentation Prises secteur (AC) Commutées: 2 Non commutées: 1 Consommation Dimensions (L) x (H) x (D) Poids UNITÉ DE TELECOMMANDE (RC-176) Système de télécommande: Système infrarouge Alimentation: 3V CC, deux piles sèches R6P ("AA") Dimensions extérieures: 55(W) x 194(H) x 16(D) mm (5.5" x 7.6" x 1.6") (incluant batteries)

Note: \*1 For Europe and Multi-Voltage \*2 For U.S.A. and Canada

Specifications and contents are subject to change without notice for purposes of improvement.

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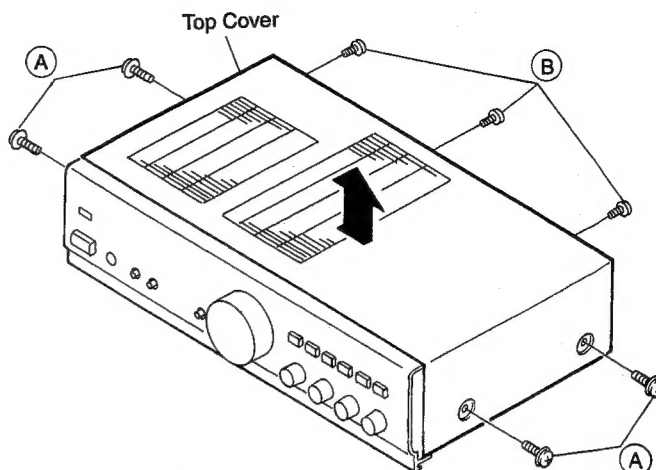
Specifications and contents are subject to change without notice for purposes of improvement.

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## REMOVAL OF EACH SECTION

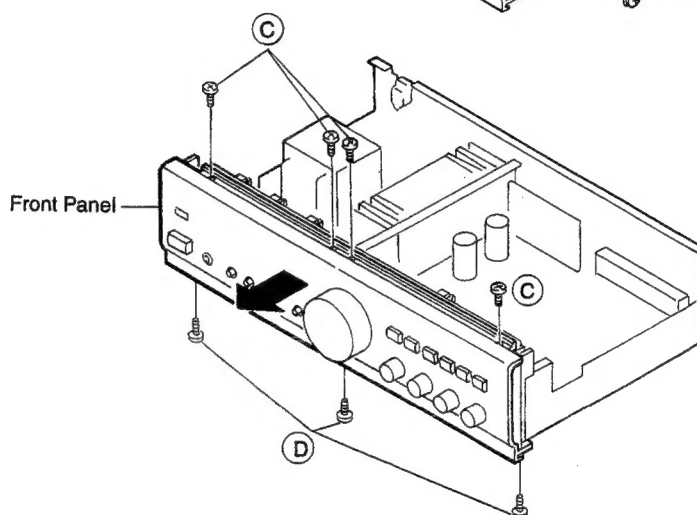
### ● Top Cover

- 1) Remove 4 screws (A) and 3 screws (B).
- 2) Pull up Top Cover in arrow direction.



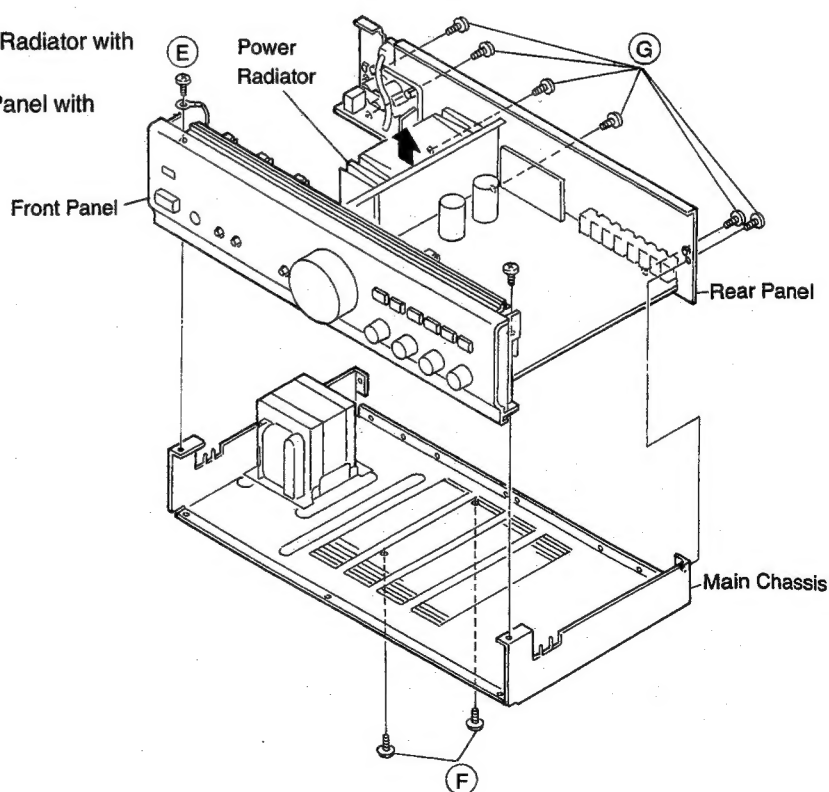
### ● Front Panel

- 1) Remove 4 screws (C).
- 2) Remove 3 screws (D).
- 3) Detach Front Panel in arrow direction.



### ● Main Chassis

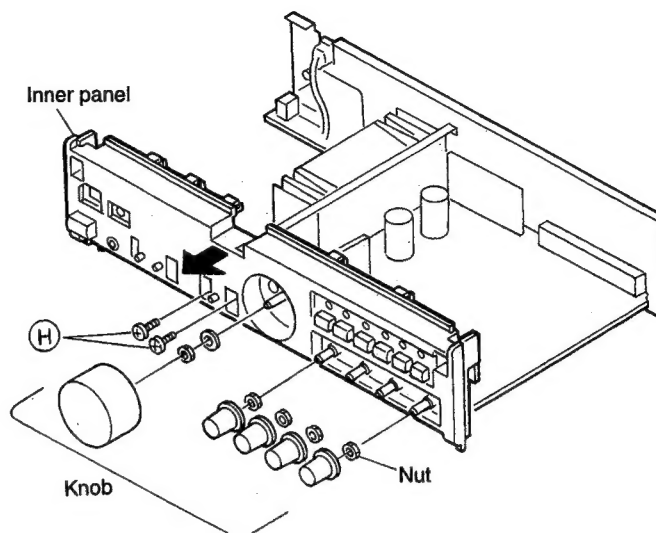
- 1) Remove 2 screws (E).
- 2) Remove 2 screws (F) securing Power Radiator with Main Chassis.
- 3) Remove 6 screws (G) securing Rear Panel with Main Chassis.





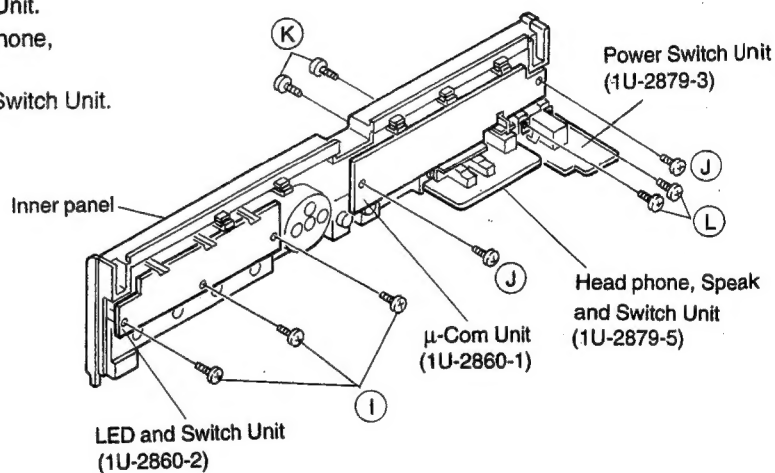
### ● Inner Panel

- 1) Remove 5 Knobs and 5 nuts.
- 2) Remove 2 screws (H), and detach Inner Panel in arrow direction.

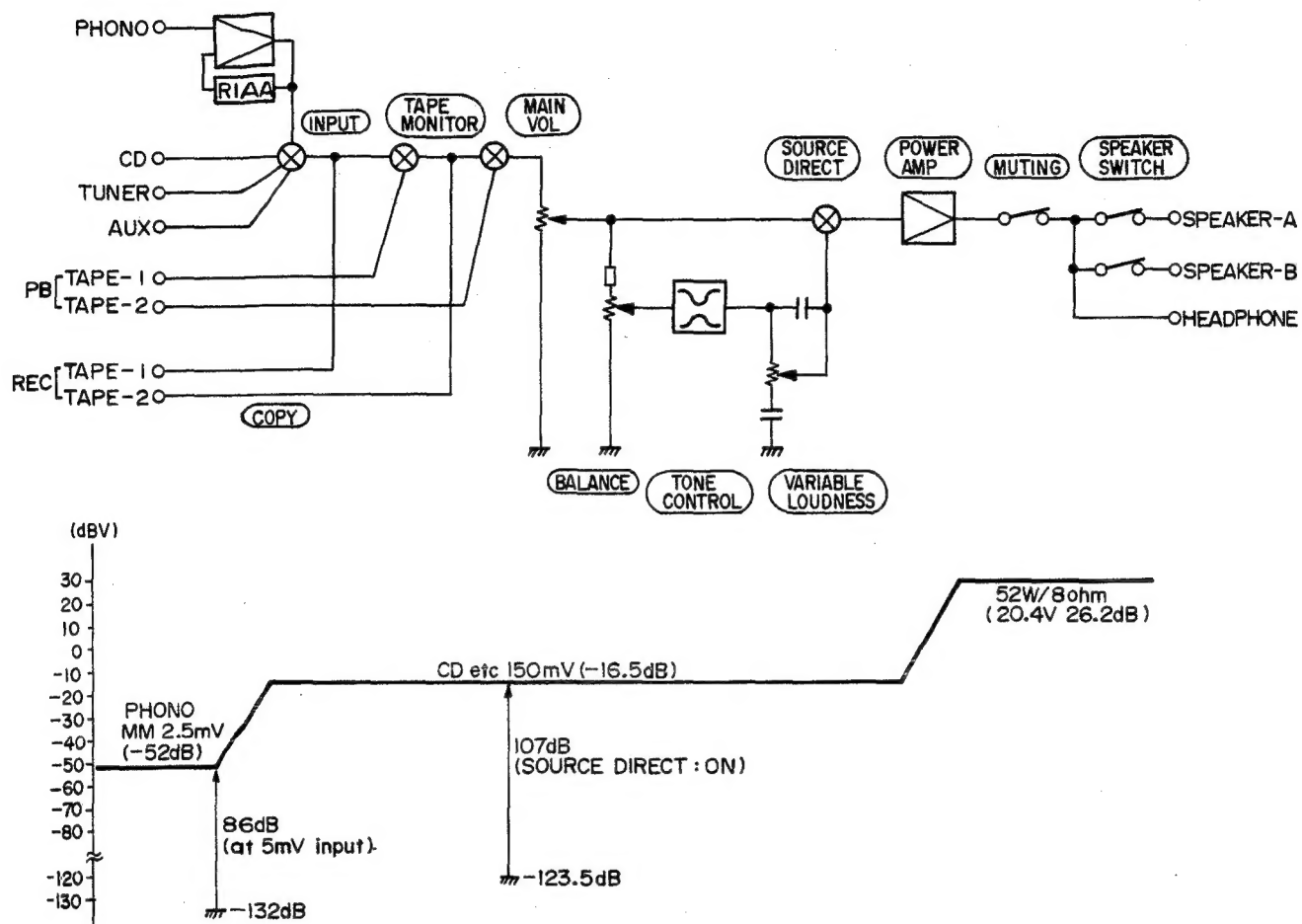


### ● Each Unit of Inner Panel

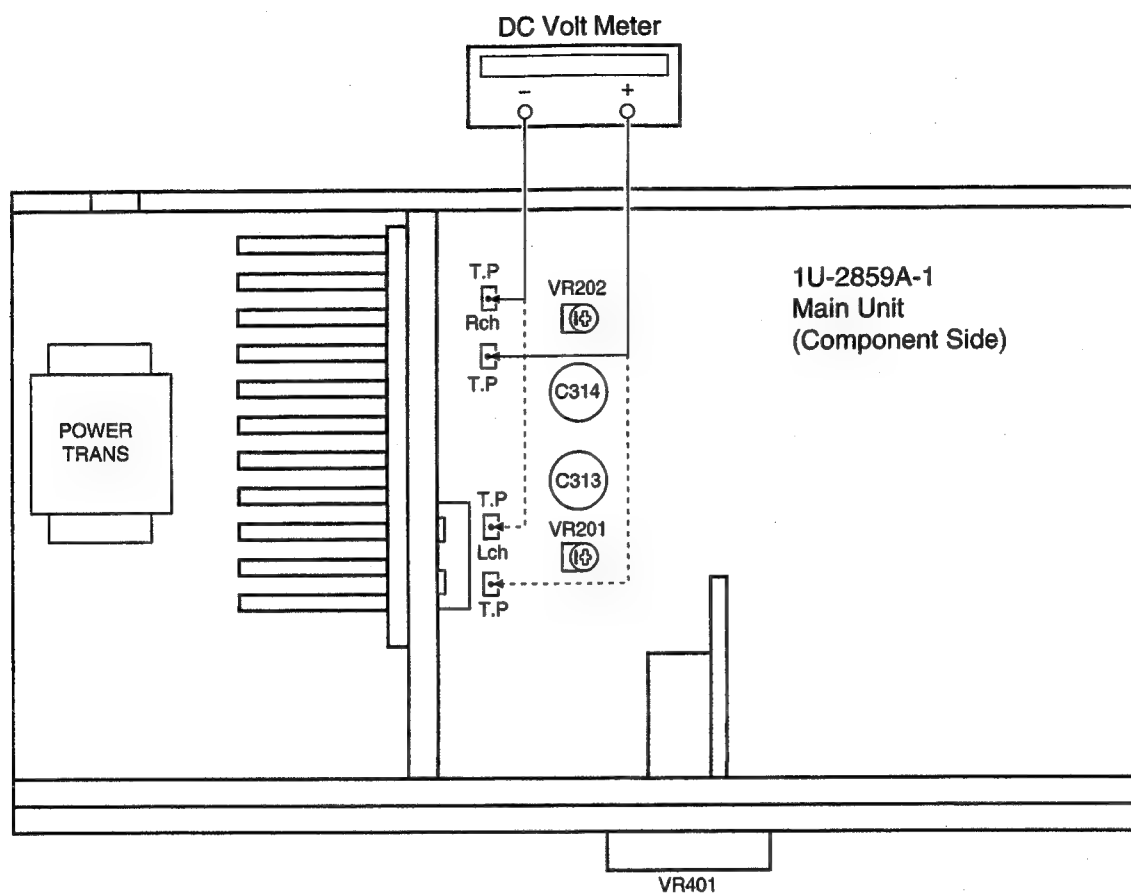
- 1) Remove 3 screws (I), and detach LED and Switch Unit.
- 2) Remove 2 screws (J), and detach  $\mu$ -Com Unit.
- 3) Remove 2 screws (K), and detach Head phone, SP Switch Unit.
- 4) Remove 2 screws (L), and detach Power Switch Unit.



## BLOCK AND LEVEL DIAGRAM



## METHOD OF ADJUSTMENTS



### IDLING CURRENT

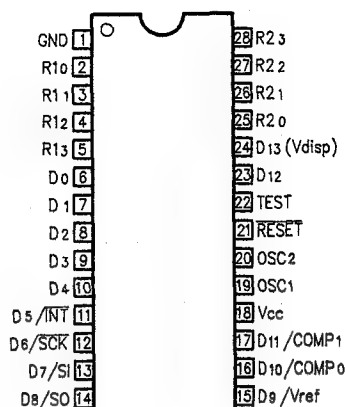
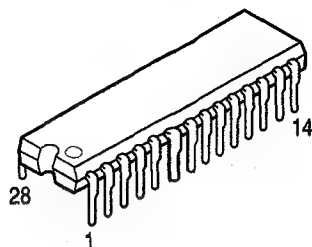
#### ● Setup

1. Lay the unit at an ordinary position away from a direct current from a cooler or fan. Do the adjustment at a temperature between 15°C (59°F) and 30°C (86°F).
2. Set controls as follows.  
 POWER SWITCH → OFF (■)  
 VOLUME CONTROL → fully counterclockwise. (↺) min. [Main volume (VR401) and Semifixed resistors] (VR201...Lch, VR202...Rch)  
 SPEAKER Terminals → open: do not connect the speakers, dummy load etc.

#### ● Adjustment

1. Remove Top cover. And then connect DC Voltmeter to Test points of 1U-2859A1 (Main Unit).
2. Connect Power cord to AC wall outlet, and turn Power Switch "on" (■). Within 10 seconds turn VR201 (Lch) and VR202 (Rch) clockwise so that DC voltmeter reads  $17 \pm 3\text{mV DC}$ .
3. Then after 2 minutes warm up adjust VR201 and VR202 so that the DC Voltmeter reads  $17 \pm 3\text{mV DC}$ .
4. And after 10 minutes warm up adjust VR201 and VR202 so that the DC Voltmeter reads  $11 \pm 3\text{mV DC}$ .

## SEMICONDUCTORS

● IC's  
HD404222 (IC101)

## HD404222 Terminal Function

Pin No.	Symbol	Typ	Opt	I/O	Res	Ini	Act	Det	Function
1	GND	—	—	—	—	—	—	—	Ground.
2	PHONO	B	IU	O	HZ	H	L	—	LED drive output for function indication.
3	CD	B	IU	O	HZ	H	L	—	LED drive output for function indication.
4	TUNER	B	IU	O	HZ	H	L	—	LED drive output for function indication.
5	AUX	B	IU	O	HZ	H	L	—	LED drive output for function indication.
6	VOLUME UP	B	IU	O	HZ	L	H	—	Volume drive output.
7	VOLUME DOWN	B	IU	O	HZ	L	H	—	Volume drive output.
8	NC	B	IU	I	HZ	L	—	—	Connect to ground.
9	B-DOWN	B	IU	I	HZ	H	L	Lv	Power supply stop detection input.
10	PROTECTION	B	IU	I	HZ	H	L	Lv	Protecting detection input.
11	REMOCON	B	IU	I	HZ	H	L	Ed	Remote control signal input.
12	CK	B	IU	O	HZ	L	H	—	Analog function switch control output (clock).
13	ST	B	IU	O	HZ	L	H	—	Analog function switch control output (chip select).
14	DATA	B	IU	O	HZ	L	H	—	Analog function switch control output (data).
15	VREF	—	—	—	—	—	—	—	Reference voltage input for comparator.
16	KEY IN	B	IU	I	HZ	—	—	Alg	Button signal input (analog).
17	NC	B	IU	I	HZ	L	—	—	Connect to ground.
18	Vcc	—	—	—	—	—	—	—	Power supply.
19	OSC1	—	—	I	—	—	—	—	Xtal input.
20	OSC2	—	—	O	—	—	—	—	Xtal output.
21	RESET	—	EU	I	L	H	H	—	Reset signal input.
22	—	—	—	I	—	—	—	—	
23	POWER ON/OFF	B	IU	O	HZ	H	L	—	Power ON/OFF shift output (L: Power ON).
24	MUTING	B	IU	O	HZ	H	H	—	Mute signal output (H: mute ON).
25	NC	B	IU	O	HZ	L	—	—	Connect to ground.
26	MUTE/STANDBY	B	IU	O	HZ	H	L	—	LED drive output for Mute/Standby indication.
27	TAPE2	B	IU	O	HZ	H	L	—	LED drive output for function indication.
28	TAPE1	B	IU	O	HZ	H	L	—	LED drive output for function indication.

**Note:**

Typ (Type): B=NMOS open drain.

Opt (Option): IU=internal pull up, EU=external pull up.

Port state: Res=reset, Ini=standby, Act=active.

Det: Lv=level, Ed=edge, Alg=analog.

I/O: Port input / output for defined name (I: Input, O: Output).

Res: Show port state at reset (H: High level, L: Low level, HZ: High impedance).

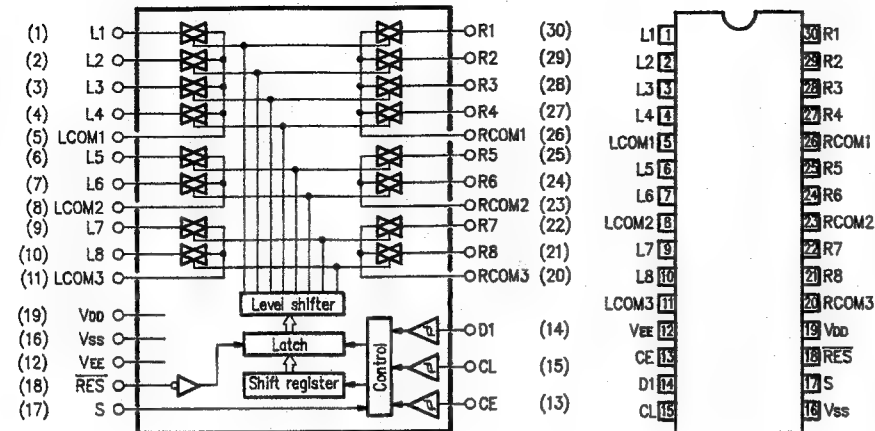
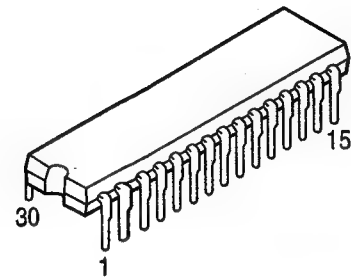
Opt: ★U: Pull up, ★D: Pull down.

Det: Show operating condition of input port (Lv: Detect level, Ed: Detect edge).

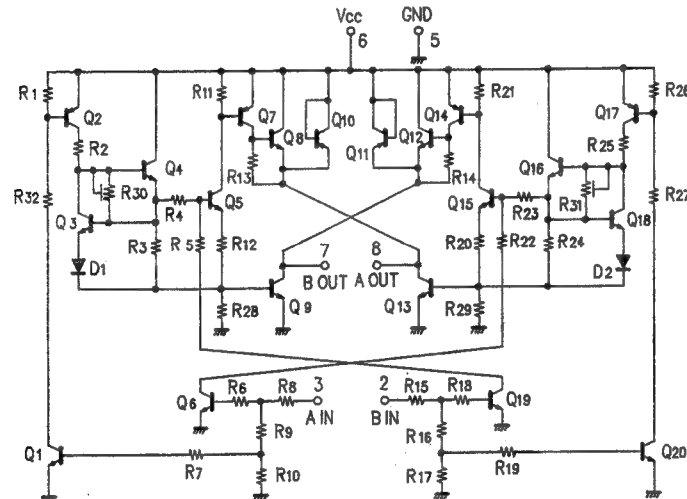
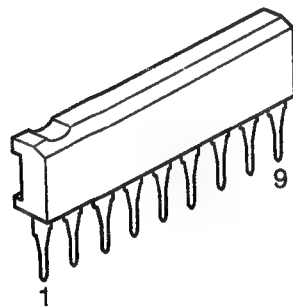
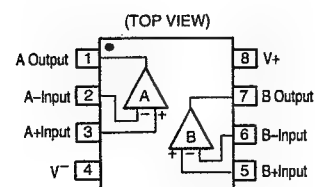
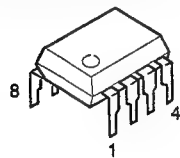
Ini: Show input / output port initialization (H: High level, L: low level).

Act: Show port state at operating.

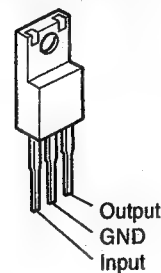
LC7821 (IC002)



BA6208S (IC103)

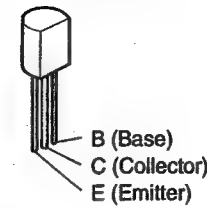
BA15218 (IC007)  
NJM2068DDC (IC001, 201)

NJM7806FA (IC104)

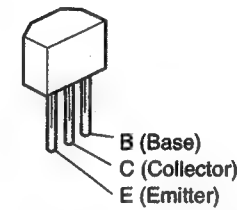


## ● TRANSISTORS

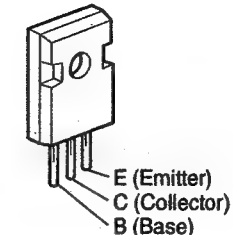
2SA988 (E/F)  
2SC1815 (BL)  
2SC1841 (E/F)



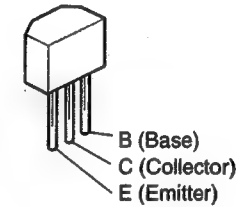
2SA933S (S)  
2SC1740S (S), (E)



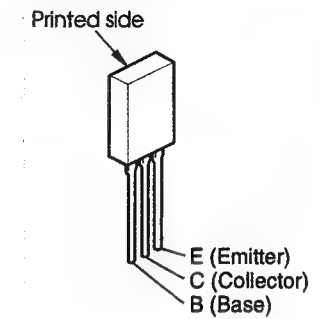
2SA1633 (E/F) (TR217,218)  
2SC4278 (E/F) (TR215,216)



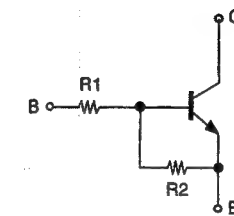
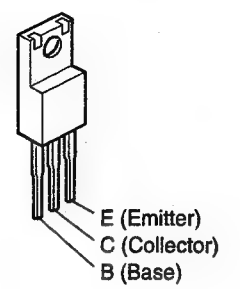
DTC114ES NPN  
DTC143ZSA NPN



2SB1328 (P)  
2SD2004 (P)



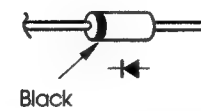
2SD1762 (E/F)



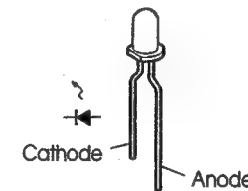
	R1	R2
DTC114ES	10kohm	10kohm
DTC143ZSA	4.7ohm	47ohm

## ● DIODES (including LED)

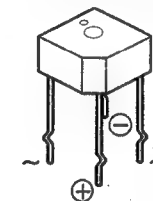
1SS252  
1S2471



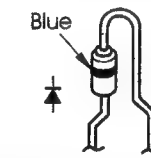
SEL-1810A (Orange)  
SEL-1210S (Red)



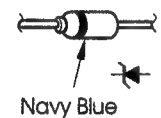
S4VB20 (D306)



1SR35-200A



MTZ6.2A MTZJ18A  
MTZJ3.3A MTZJ27A  
MTZJ7.5C

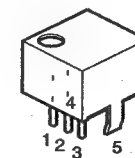


● POSISTOR  
PTH9M04BB222TS2F333  
(P401)

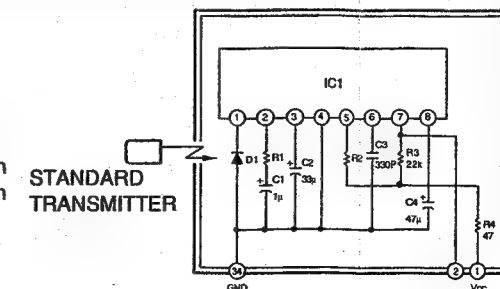


## ● OTHER

SBX1610-52 (Remote Control Receiver) (IC105)



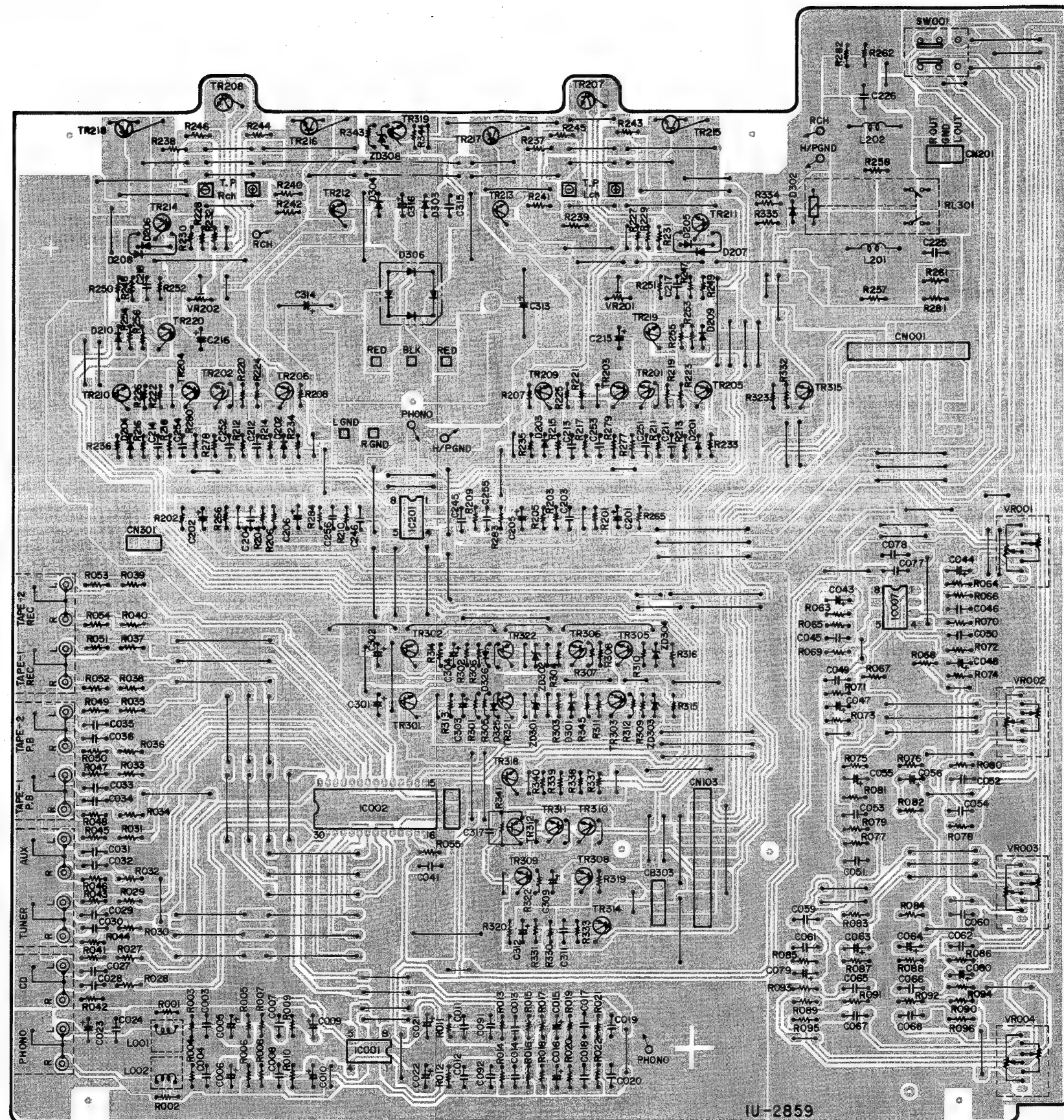
1. Vcc
2. Output
3. GND
4. Case Fin
5. Case Fin



IC1 : CX20106A Chip  
D1 : PIN Photo Diode Chip  
C1, C2, C4 : Aluminum Electrolytic Capacitor  
C3 : SL Characteristic  $\pm 5\%$   
R1 : Gain Adjuster  
R2 : fo Adjuster  $\pm 1\%$  USE  
R3, 4 :  $\pm 5\%$

### PRINTED WIRING BOARD (Pattern Side)

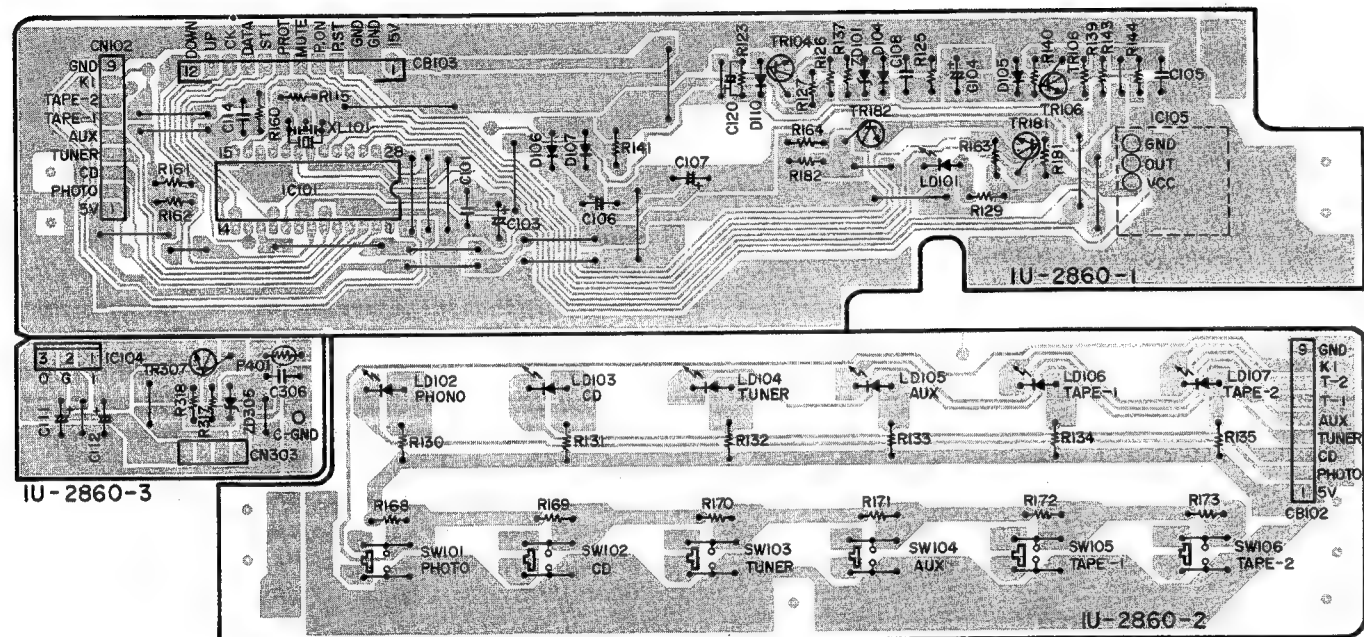
**1U-2859A MAIN UNIT ASS'Y**





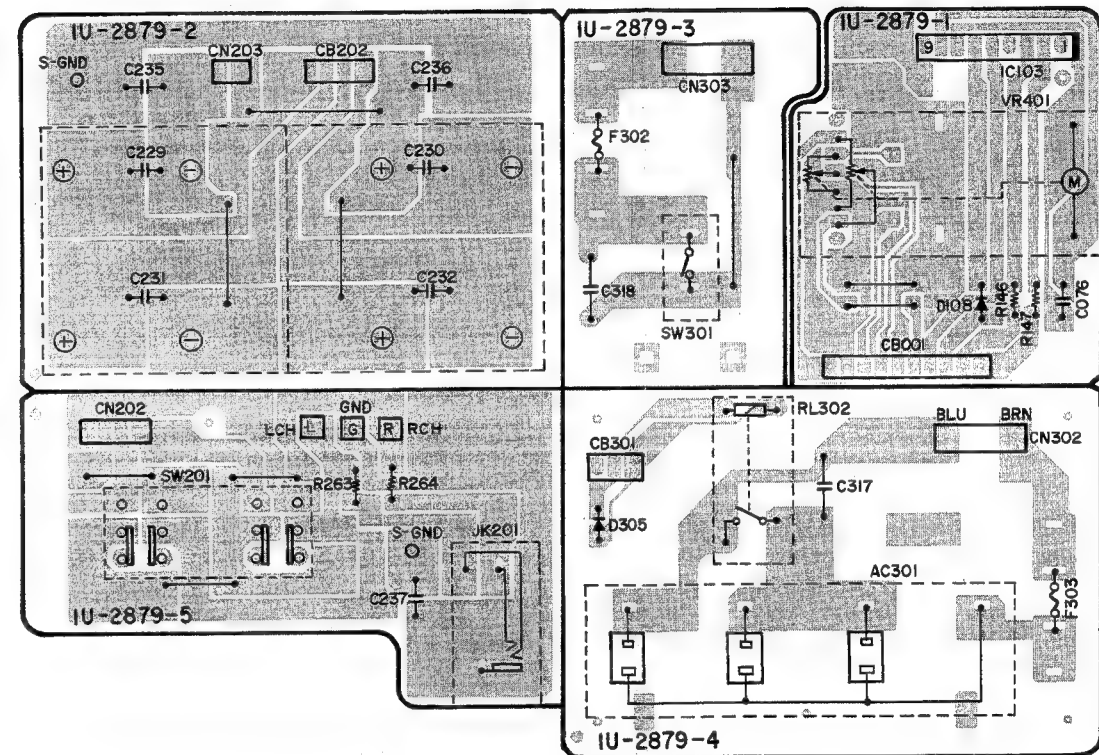
1U-2860A  $\mu$ -COM UNIT ASS'Y

1U-2860A $\mu$ -Com Unit Ass'y	
1	$\mu$ -Com Unit
2	LED, Switch Unit
3	Regulator Unit



## 1U-2879A VOLUME UNIT ASS'Y

1U-2879 Volume Unit Ass'y	
1	Volume Unit
2	SP terminal Unit
3	Power Switch Unit
4	AC Outlet Unit
5	Head Phone, SP SW Unit



Version	Unit No.	F302	F303	F304	SP terminal	AC outlet
Black for Europe	1U-2879A	T1A/250V	T1A/250V	—	205 0952 009	203 3950 002
Gold for Europe	1U-2879A	T1A/250V	T1A/250V	—	205 0952 009	203 3950 002
U.S.A. & Canada	1U-2879D	5A/125V	8A/125V	—	2050952009	2033926007
U.K. & Australia	1U-2879E	T1A/250V	—	—	2050952009	—

## NOTE FOR PARTS LIST

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film  $\pm 5\%$ , 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

## WARNING:

Parts marked with this symbol  $\triangle$  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

## ● Resistors

Ex.:  $\overline{RN}$  14K  $\overline{2E}$  182  $\overline{G}$  FR  
Type Shape and performance Power Resistance Allowable error Others

RD : Carbon	2B : 1/8W	F : $\pm 1\%$	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : $\pm 2\%$	NL : Low noise type
RS : Metal oxide film	2H : 1/2W	J : $\pm 5\%$	NB : Non-burning type
RW : Winding	3A : 1W	K : $\pm 10\%$	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : $\pm 20\%$	F : Lead wire forming
RK : Metal mixture	3F : 3W		
	3H : 5W		

## \* Resistance

$\overline{1} \overline{8} \overline{2} \Rightarrow 1800 \text{ ohm} = 1.8 \text{ kohm}$   
Indicates number of zeros after effective number.  
2-digit effective number.

• Units: ohm

$\overline{1} \overline{R} \overline{2} \Rightarrow 1.2 \text{ ohm}$   
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units: ohm

## ● Capacitors

Ex.:  $\overline{CE}$  04W  $\overline{1H}$   $\overline{2R2}$  M BP  
Type Shape and performance Dielectric strength Capacity Allowable error Others

CE : Aluminum foil electrolytic	0J : 6.3V	F : $\pm 1\%$	HS : High stability type
CA : Aluminum solid electrolytic	1A : 10V	G : $\pm 2\%$	BP : Non-polar type
CS : Tantalum electrolytic	1C : 16V	J : $\pm 5\%$	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : $\pm 10\%$	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : $\pm 20\%$	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : $\pm 80\%$	U : UL part
CP : Oil	2A : 100V	-20%	C : CSA part
CM : Mica	2B : 125V	P : $\pm 100\%$	W : UL-CSA type
CF : Metallized	2C : 160V	-0%	F : Lead wire forming
CH : Metallized	2D : 200V	C : $\pm 0.25\text{pF}$	
	2E : 250V	D : $\pm 0.5\text{pF}$	
	2H : 500V	= : Others	
	2J : 630V		

## \* Capacity (electrolyte only)

$\overline{2} \overline{2} \overline{2} \Rightarrow 2200\mu\text{F}$   
Indicates number of zeros after effective number.  
2-digit effective number.

• Units:  $\mu\text{F}$ .

$\overline{2} \overline{R} \overline{2} \Rightarrow 2.2\mu\text{F}$   
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units:  $\mu\text{F}$ .

## \* Capacity (except electrolyte)

$\overline{2} \overline{2} \overline{2} \Rightarrow 2200\text{pF} = 0.0022\mu\text{F}$   
(More than 2) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units:  $\mu\text{F}$ .

$\overline{2} \overline{2} \overline{1} \Rightarrow 220\text{pF}$   
(0 or 1) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PARTS LIST OF P.W.B. ASS'Y  
1U-2859A MAIN UNIT ASS'Y

Ref.No.	Parts No.	Parts Name	Remarks
SEMICONDUCTORS GROUP			
IC001	263 0609 002	IC NJM2068DDC	
IC002	262 1227 008	IC LC7821	
IC007	263 0565 007	IC BA15218	
IC201	263 0609 002	IC NJM2068DDC	
TR201,202	273 0235 923	Transistor 2SC1841(E/F)	
TR203-206	271 0131 924	Transistor 2SA988(E/F)	
TR207,208	273 0198 918	Transistor 2SC1815(BL)	
TR209,210	273 0235 923	Transistor 2SC1841(E/F)	
TR211,212	274 0151 000	Transistor 2SD2004(P)	
TR213,214	272 0107 906	Transistor 2SB1328(P)	
TR219,220	273 0235 923	Transistor 2SC1841(E/F)	
TR301	274 0151 000	Transistor 2SD2004(P)	
TR302	272 0107 906	Transistor 2SB1328(P)	
TR303	271 0131 924	Transistor 2SA988(E/F)	
TR305	269 0160 002	Transistor DTC143ZSA	Built in resistor
TR306	273 0235 923	Transistor 2SC1841(E/F)	
TR308-311	273 0303 910	Transistor 2SC1740S(S)	
TR312	271 0192 905	Transistor 2SA933S(S)	
TR314	271 0131 924	Transistor 2SA988(E/F)	
TR315	273 0235 923	Transistor 2SC1841(E/F)	
TR318	269 0160 002	Transistor DTC143ZSA	Built in resistor
TR319	273 0303 910	Transistor 2SC1740S(S)	
TR321	273 0303 910	Transistor 2SC1740S(S)	
TR322	271 0192 905	Transistor 2SA933S(S)	
D201-204	276 0616 907	Diode 1SS252	
D205-208	276 0619 904	Diode 1S2471	
D209,210	276 0616 907	Diode 1SS252	
D301	276 0553 905	Diode 1SR35-200A	
D302	276 0616 907	Diode 1SS252	
D303,304	276 0553 905	Diode 1SR35-200A	
$\triangle$ D306	276 0305 001	Diode S4VB20	Bridge
D325,326	276 0616 907	Diode 1SS252	
ZD301,302	276 0637 902	Zener diode MTZJ6.2A	6.2V
ZD303,304	276 0645 949	Zener diode MTZJ27A	27V
ZD308	276 0635 904	Zener diode MTZJ7.5C	7.5V
RESISTORS GROUP			
$\triangle$ R213-216	241 2379 932	Carbon film 620 ohm 1/4 W(NB)	RD14B2E621JNBS
$\triangle$ R233-236	241 2377 989	Carbon film 150 ohm 1/4 W(NB)	RD14B2E151JNBS
$\triangle$ R237-238	244 2051 958	Metal oxide 220 ohm 1W	RS14B3A221JNBS(S)
$\triangle$ R239-242	244 2043 982	Metal oxide 0.22 ohm 1W	RS14B3A022JNBS(S)
$\triangle$ R261,262	244 2043 937	Metal oxide 10 ohm 1W	RS14B3A100JNBS(S)
$\triangle$ R281,282	244 2043 937	Metal oxide 10 ohm 1W	RS14B3A100JNBS(S)
$\triangle$ R309,310	244 2051 958	Metal oxide 220 ohm 1W	RS14B3A221JNBS(S)
$\triangle$ R315,316	241 2387 940	Carbon film 4.7 ohm 1/4W(NB)	RD14B2E4R7JNBS
$\triangle$ R334	244 2052 915	Metal oxide 1.8 kohm 1W	RS14B3A182JNBS(S)
$\triangle$ R335	244 2050 988	Metal oxide 2 kohm 1W	RS14B3A202JNBS(S)
$\triangle$ R337,338	244 2052 902	Metal oxide 2.7 kohm 1W	RS14B3A272JNBS(S)
$\triangle$ R339,340	244 2051 932	Metal oxide 3.3 kohm 1W	RS14B3A332JNBS(S)
VR001	211 0798 103	Variable resistor 100 kohm	Balance
VR002	211 0797 117	Variable resistor 30 kohm	Bass
VR003	211 0797 133	Variable resistor 10 kohm	Treble
VR004	211 0830 003	Variable resistor 100 kohm	Loudness
VR201,202	211 6064 048	Semi fixed resistor 5 kohm	V06PB502
CAPACITORS GROUP			
C003,004	253 1179 945	Ceramic cap. 220pF/50V	CK45B1H221K
C005,006	254 4254 909	Electrolytic 10 $\mu\text{F}$ /16V	CE04W1C100M
C007,008	253 1179 903	Ceramic cap. 100pF/50V	CK45B1H101K
C009,010	254 4256 952	Electrolytic 220 $\mu\text{F}$ /25V	CE04W1E221M
C011,012	255 1265 978	Mylar film 0.022 $\mu\text{F}$ /50V	CQ93M1H223J(B)
C013,014	255 1265 907	Mylar film 0.0068 $\mu\text{F}$ /50V	CQ93M1H682J(B)
C015,016	254 4254 909	Electrolytic 10 $\mu\text{F}$ /16V	CE04W1C100M
C017-020	253 1179 945	Ceramic cap. 220pF/50V	CK45B1H221K
C021-023	254 4260 948	Electrolytic 1 $\mu\text{F}$ /50V	CE04W1H010M
C024	253 1181 904	Ceramic cap. 0.01 $\mu\text{F}$ /50V	CK45F1H103Z
C027-036	253 4537 982	Ceramic cap. 56pF/50V	CC45SL1H560J
C041	255 1265 936	Mylar film 0.01 $\mu\text{F}$ /50V	CQ93M1H103J(B)
C043,044	254 4254 909	Electrolytic 10 $\mu\text{F}$ /16V	CE04W1C100M
C045,046	253 1179 903	Ceramic cap. 100pF/50V	CK45B1H101K
C047,048	254 4254 938	Electrolytic 47 $\mu\text{F}$ /16V	CE04W1C470M
C049,050	253 1179 903	Ceramic cap. 100pF/50V	CK45B1H101K
C051,052	255 1264 940	Mylar film 0.0022 $\mu\text{F}$ /50V	CQ93M1H222J(B)
C053,054	256 1035 907	Metalized 0.18 $\mu\text{F}$ /50V	CF93A1H184J
C055,056	254 4260 948	Electrolytic 1 $\mu\text{F}$ /50V	CE04W1H010M
C059,060	255 1265 949	Mylar film 0.012 $\mu\text{F}$ /50V	CQ93M1H123J(B)
C061,062	256 1034 940	Metalized 0.056 $\mu\text{F}$ /50V	CF93A1H563J
C063,064	254 4260 922	Electrolytic 0.33 $\mu\text{F}$ /50V	CE04W1HR33M
C065,066	253 1179 990	Ceramic cap. 560pF/50V	CK45B1H561K
C067,068	255 1265 978	Mylar film 0.022 $\mu\text{F}$ /50V	CQ93M1H223J(B)
C077,078	253 1181 904	Ceramic cap. 0.01 $\mu\text{F}$ /50V	CK45F1H103Z
C079,080	254 4254 909	Electrolytic 10 $\mu\text{F}$ /16V	CE04W1C100M
C091,092	255 1264 940	Mylar film 0.0022 $\mu\text{F}$ /50V	CQ93M1H222J(B)
C201,202	254 4260 964	Electrolytic 3.3 $\mu\text{F}$ /50V	CE04W1H3R3M
C203,204	253 4538 907	Ceramic cap. 68pF/50V	CC45SL1H680J
C205,206	254 4256 936	Electrolytic 47 $\mu\text{F}$ /25V	CE04W1E470M
C211-214	253 4538 910	Ceramic cap. 75pF/50V	CC45SL1H750J
C215,216	254 4260 948	Electrolytic 1 $\mu\text{F}$ /50V	CE04W1H010M
C217,218	255 1265 936	Mylar film 0.01 $\mu\text{F}$ /50V	CQ93M1H103J(B)
C225,226	256 1034 979	Metalized 0.1 $\mu\text{F}$ /50V	CF93A1H104J

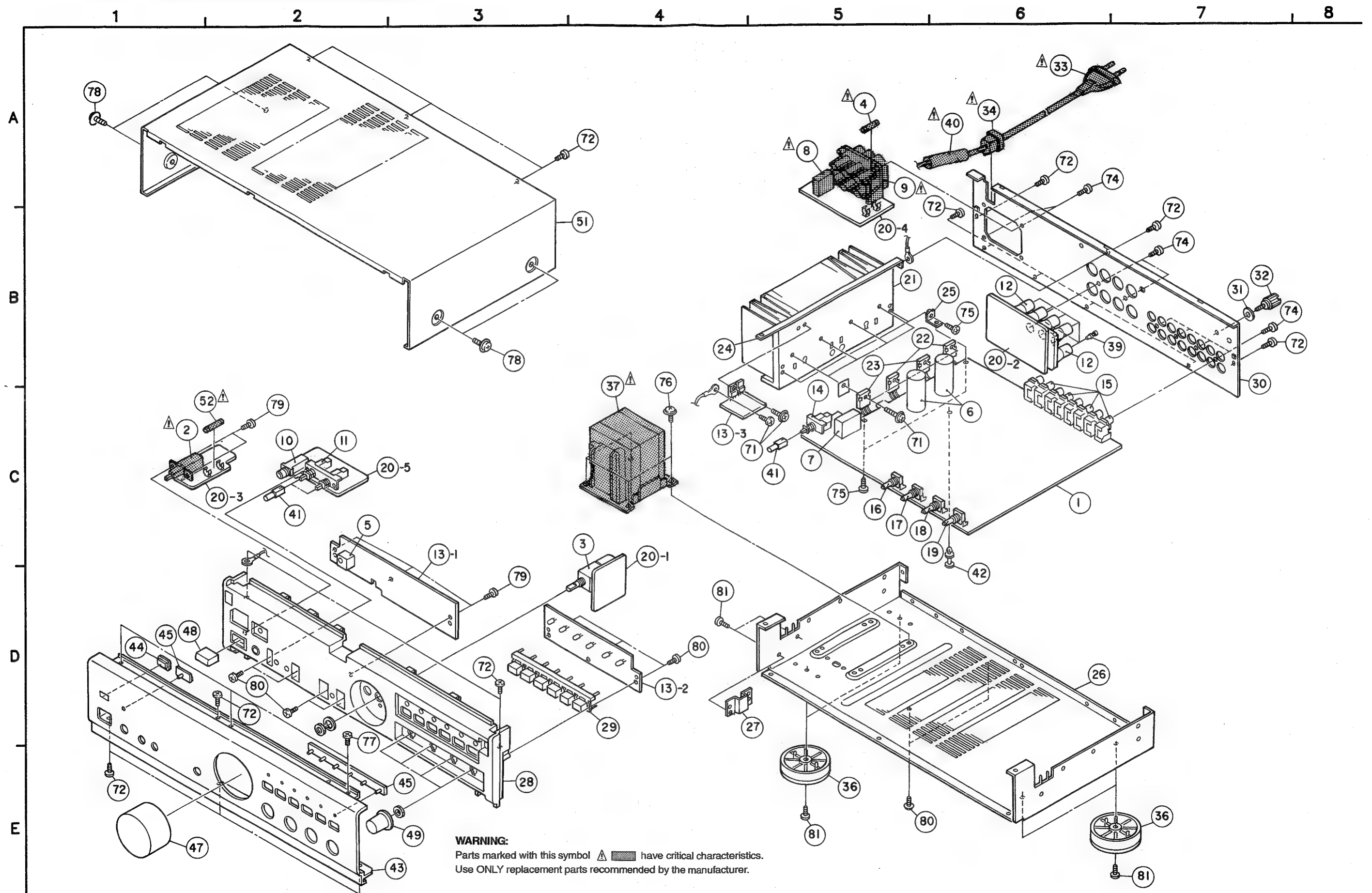
1U-2860A  $\mu$ -COM UNIT ASS'Y

Ref.No.	Parts No.	Parts Name	Remarks	
C245,246	253 4537 982	Ceramic cap. 56pF/50V	CC45SL1H560J	
C251-254	255 1264 982	Mylar film 0.0047 $\mu$ F/50V	CQ93M1H472J(B)	
C255,256	253 4537 924	Ceramic cap. 33pF/50V	CC45SL1H330J	
C301,302	254 4260 948	Electrolytic 1 $\mu$ F/50V	CE04W1H010M	
C303,304	254 4260 980	Electrolytic 10 $\mu$ F/50V	CE04W1H100M	
C309	254 4250 945	Electrolytic 330 $\mu$ F/6.3V	CE04W0J331M	
C311	253 1181 904	Ceramic cap. 0.01 $\mu$ F/50V	CK45F1H103Z	
C312	254 4256 936	Electrolytic 47 $\mu$ F/25V	CE04W1E470M	
C313,314	254 6197 006	Electrolytic 8200 $\mu$ F/56V	CE68W==822MC(DL)	
C315	256 1042 903	Metalized 0.1 $\mu$ F/250V	CF93A2E104K	
C316	254 4263 916	Electrolytic 0.22 $\mu$ F/100V	CE04W2AR22M	
C317	253 9039 906	BC Ceramic cap. 0.1 $\mu$ F/25V	CK45=1E104Z	
OTHER GROUP				Q'ty
	-	(P.W.board)		(1)
L001,002	235 9003 002	FTZ choke coil		2
L201,202	235 0104 007	Inductor 1 $\mu$ H		2
SW001	212 9520 003	1 p push switch	S.Direct	1
RL301	214 0129 001	Relay(DH2TU)		1
	204 8497 000	4 p pin jack(GND)(K)		4
CN001	205 0666 007	10 p conn. base(9130)		1
	205 0233 045	4 p EH Connector Base		1
	203 5114 008	3 p SCN-SCN Connector Cord		1
	203 5115 007	3 p SCN Connector Cord		1
	205 0233 032	3 p EH Connector Base		1
	203 0632 022	1 p SIN Cord Ass'y		1
	203 0632 006	1 p SIN Cord Ass'y		1
	203 0632 019	1 p SIN Cord Ass'y		1
	205 0275 029	12 p EH Connector Base		1
	EP- 5667 H2	Terminal	L=20	10
	415 0309 071	PVC tube (L=10)	for TR207,208	4
SEMICONDUCTORS GROUP				
IC101	262 2168 001	IC HD404222	$\mu$ -com	
IC104	263 0793 002	IC NJM7806FA(S)	Regulator +6V	
IC105	499 0150 008	IC SBX1610-52	Remocon sensor	
TR104	269 0020 906	Transistor DTC114ES	Built in resistor	
TR106	273 0388 906	Transistor 2SC1740S(E)		
TR181,182	269 0160 002	Transistor DTC143ZSA	Built in resistor	
TR307	274 0120 002	Transistor 2SD1762(E/F)		
D104,105	276 0616 907	Diode 1SS252		
D106,107	276 0553 905	Diode 1SR35-200A		
D110	276 0616 907	Diode 1SS252		
ZD101	276 0634 905	Zener diode MTZJ3.3A	3.3V	
ZD305	276 0645 907	Zener diode MTZJ18A	18V	
LD101	393 9453 903	LED SEL1810A	Orange	
LD102-107	393 9434 906	LED SEL1210S	Red	
P401	279 0034 067	Posistor PTH9M04BB222TS2F333		
RESISTORS GROUP				
$\Delta$ R141	241 2387 940	Carbon Film 4.7 ohm 1/4 W(NE)	RD14B2E4R7JNBS	
CAPACITORS GROUP				
C101	253 1181 904	Ceramic cap. 0.01 $\mu$ F/50V	CK45F1H103Z	
C103	254 4250 929	Electrolytic 100 $\mu$ F/6.3V	CE04W0J101M	
C104	254 4260 058	Electrolytic 2.2 $\mu$ F/50V	CE04W1H2R2H	
C105	256 1034 982	Metalized 0.12 $\mu$ F/50V	CF93A1H124J	
C106	254 4250 932	Electrolytic 220 $\mu$ F/6.3V	CE04W0J221M	
C107	254 4250 084	Electrolytic 3300 $\mu$ F/6.3V	CE04W0J332M	
C108	255 1265 936	Mylar Film 0.01 $\mu$ F/50V	CQ93M1H103J(B)	
C111,112	254 4260 948	Electrolytic 1 $\mu$ F/50V	CE04W1H010M	
C114	253 9039 906	BC Ceramic cap. 0.1 $\mu$ F/25V	CK45=1E104Z	
C120	254 4260 919	Electrolytic 0.22 $\mu$ F/50V	CE04W1HR22M	
C306	253 1181 904	Ceramic cap. 0.01 $\mu$ F/50V	CK45F1H103Z	
OTHER GROUP				Q'ty
	-	(P.W.board)		(1)
SW101-106	212 4789 001	Tact switch(kyung)		6
XL101	399 0191 903	Ceramic resonator	CST4.00MGW-TF01	1
	415 0309 026	PVC tube (L=20)	for P401	2
	205 0233 090	9 p EH Conector Base		1
	205 0275 029	12 p EH Conector Base		1
	204 2747 002	9 p EH-SCN Connector Cord		1
	203 6475 005	4 p EH-SCN Connector Cord		1
	203 0633 018	1 p Contact Ass'y		1

## 1U-2879 VOLUME UNIT ASS'Y

Ref.No.	Parts No.	Parts Name	Remarks	
SEMICONDUCTORS GROUP				
IC103	263 0927 001	IC BA6208S		
D108	276 0616 907	Diode 1SS252		
D305	276 0616 907	Diode 1SS252		
RESISTORS GROUP				
$\Delta$ R263,264	244 2052 931	Metal oxide 390 ohm 1W	RS14B3A391JNBS(S)	
VR401	211 0857 002	Variable resister 100 kohm	Main	
CAPACITORS GROUP				
C076	253 1181 904	Ceramic cap. 0.01 $\mu$ F/50V	CK45F1H103Z	
C229-232	255 1264 982	Mylar film 0.0047 $\mu$ F/50V	CQ93M1H472J(B)	
C235,236	253 1181 904	Ceramic cap. 0.01 $\mu$ F/50V	CK45F1H103Z	
C237	253 9039 906	BC Ceramic cap. 0.1 $\mu$ F/25V	CK45=1E104Z	
$\Delta$ C317,318	256 8003 713	Ceramic cap. 4700pF/400V	CK45E2GAC472MC	
OTHER GROUP				Q'ty
	-	(P.W.board)		(1)
SW201	212 4778 009	2 p push switch	Speaker	1
$\Delta$ SW301	212 1030 009	Power switch (TV-5)	Power	1
$\Delta$ RL302	214 0142 004	Relay(TV-5)		1
$\Delta$ F302	206 1015 058	Fuse 1.6A		1
$\Delta$ F303	206 1015 029	Fuse 1 A T		1
	202 0022 008	Fuse Holder		4
	204 8503 004	:Headphone jack(K)		1
	205 0952 009	4 p sp terminal		2
$\Delta$	203 3950 002	3 p AC outlet		1
CB001	205 0667 006	10 p conn. base-L(9130)		1
CN302,303	205 0692 000	2 p wrapping terminal		2
	EP-5667 H2	Terminal	L=20	3
	415 0299 000	Capacitor Cover	for C317, 318	2
	203 0633 005	1 p Contact Ass'y		2
	203 2375 002	2 p SCN Conn, Cord		1
	203 6476 004	4 p SCH-SCH Conn, Cord		1
	203 5116 006	3 p EH-SCN Conn, Cord		1

## EXPLODED VIEW OF CHASSIS AND CABINET





## PARTS LIST OF EXPLODED VIEW

Ref.No.	Parts No.	Parts Name	Remarks	Q'ty	Ref.No.	Parts No.	Parts Name	Remarks	Q'ty
1	1U-2859 A	Main unit Ass'y		1s	42	113 1745 110	:*Push button (Round)	Gold model	3
2	212 1030 009	Power switch (TV-5)		1	43	412 1979 029	P.C.B. holder		1
3	211 0857 002	Variable resistor 100 kohm	Main VR401	1	44	144 2456 101	:*Front panel	Black model	1
4	206 1015 029	Fuse 1 A T	F303	1	45	144 2456 114	:*Front panel	Gold model	1
5	499 0150 008	Remocon sensor SBX1610-52	IC105	1	46	143 9181 007	:*Remocon window		1
6	254 6197 006	Chemicon 8200µF/56 V	C313,314	2	47	143 0945 006	:*Lens		1
7	214 0129 001	Relay (DH2TU)	RL301	1	★ 46	445 8004 007	Wire clasper		10
8	214 0142 004	Relay (TV-5)	RL302	1	47	112 0761 008	:*VR knob	Black model	1
9	203 3950 002	3p AC outlet		1	48	112 0761 011	:*VR knob	Gold model	1
10	204 8503 004	:Headphone jack		1	49	113 1738 101	:*Power button	Black model	1
11	212 4778 009	2p push switch	Speaker SW201	1	50	113 1738 114	:*Power button	Gold model	1
12	205 0952 009	4p speaker terminal		2	51	112 0762 007	:*Knob(Round)	Black model	4
13	1U-2860 A	µ-com unit Ass'y		1s	52	112 0762 010	:*Knob(Round)	Gold model	4
13-1	-	µ-com unit		(1)	★ 50	412 2814 015	Card spacer (L=14)		2
13-2	-	LED & switch unit		(1)	51	102 0567 001	:*Top cover	Black model	1
13-3	-	Regulator unit		(1)	52	102 0567 014	:*Top cover	Gold model	1
14	212 9520 003	1p push switch	S.Direct SW001	1	★ 53	206 1015 058	Fuse 1.6A	F302	1
15	204 8497 000	4p pin jack(GND)(K)		4	54	513 2433 003	Serial No. Sheet		1
16	211 0798 103	Variable resistor 100 kohm	Balance VR001	1	55				
17	211 0797 117	Variable resistor 30 kohm	Bass VR002	1	<b>SCREWS</b>				
18	211 0797 133	Variable resistor 10 kohm	Treble VR003	1	71	473 8007 009	Cup screw 3×12		7
19	211 0830 003	Variable resistor 100 kohm	Loudness VR004	1	72	473 7015 018	Tapping screw(S)3×8 Black		14
20	1U-2879	Volume unit Ass'y		1s	73	-	-		
20-1	-	Volume unit		(1)	74	477 0064 107	Fixing screw		10
20-2	-	SP terminal unit		(1)	75	473 7002 018	Tapping screw(S)3×8		8
20-3	-	Power switch unit		(1)	76	473 7004 016	Tapping screw(S)4×6		6
20-4	-	AC outlet unit		(1)	77	473 7508 017	Tapping screw(P)3×10 Black		3
20-5	-	Headphone, sp sw unit		(1)	78	477 0263 005	3 P Swelling screw	Black model	4
21	417 0519 003	:*Power radiator		1	79	477 0263 018	3 P Swelling screw	Gold model	4
22	271 0283 005	Transistor 2SA1633 (E/F)	TR217,218	2	80	473 7508 004	Tapping screw(P)3×6 Black		2
23	273 0443 003	Transistor 2SC4278 (E/F)	TR215,216	2	81	473 7500 044	Tapping screw(P)3×8 Black		12
24	412 3999 007	:*Radiator bracket		1	82	473 7002 034	Tapping screw(S)3×6 Black		7
25	412 4000 005	:*P.W.B. bracket(A)		2	<b>PACKING &amp; ACCESORIES (Not included EXPLODED VIEW.)</b>				
26	411 0941 505	:*Chassis		1	101	GEN 3213	Envelope sub. Ass'y		1s
27	412 4001 004	:*Side bracket		1	101-1	505 8006 019	Envelope		(1)
28	146 1572 105	:*Inner panel	Black model	1	101-2	511 2774 009	:*Inst. manual	E,G,F,I,ES,NL,S,PO	(1)
28	146 1572 118	:*Inner panel	Gold model	1	101-3	499 0277 004	Remote control	RC-176	(1)
29	113 1739 003	:*Function button	Black model	1	101-4	-	Batteries		(2)
29	113 1739 016	:*Function button	Gold model	1	102	505 8092 010	Laminate envelope		1
30	105 1169 203	:*Rear panel		1	103	503 1191 103	:*Cushion		2
31	477 0018 001	Washer (P-87)		1	104	501 1889 008	:*Carton case		1
32	205 0071 016	Terminal Ass'y	GND	1	105	513 9111 001	Color label (Gold)	Gold model only	2
33	206 2063 009	AC cord with plug		1	106				
34	445 0056 008	Cord bush		1					
35	513 1144 005	Masking sheet		1					
36	104 0282 007	:*Foot Ass'y		4					
37	233 6173 007	Power trans.		1					
38	475 1175 002	:Washer		1					
39	477 0096 007	Push rivet		8					
40	415 0364 032	U.L. tube (ø8.3)	for AC cord	1					
41	113 1745 107	:*Push button (Round)	Black model	3					

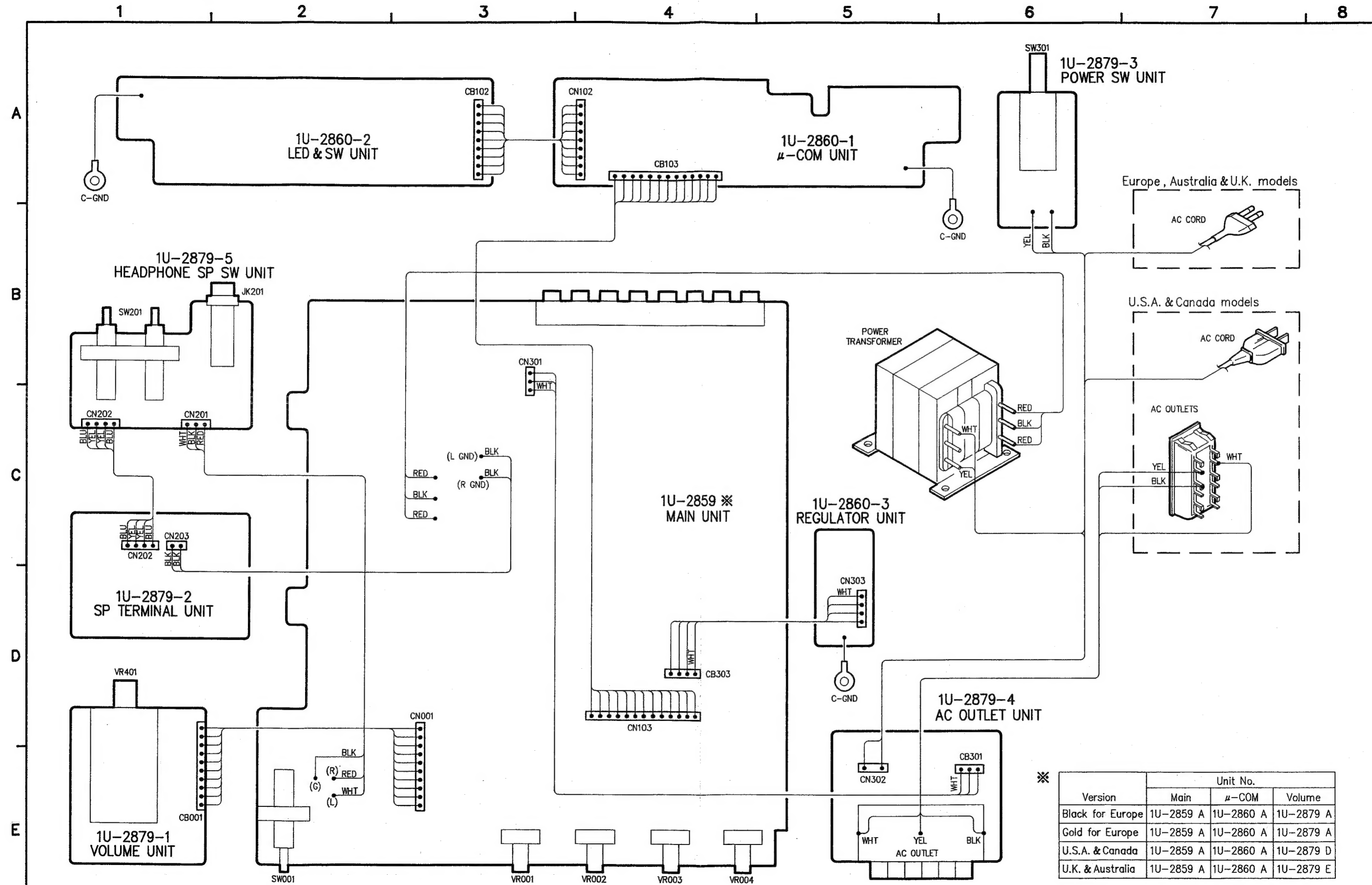
## NOTE FOR PARTS LIST

- Part indicated with the mark "●" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "1" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

## WARNING:

Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

WIRING DIAGRAM



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Version	Unit No.		
	Main	μ-COM	Volume
Black for Europe	1U-2859 A	1U-2860 A	1U-2879 A
Gold for Europe	1U-2859 A	1U-2860 A	1U-2879 A
U.S.A. & Canada	1U-2859 A	1U-2860 A	1U-2879 D
U.K. & Australia	1U-2859 A	1U-2860 A	1U-2879 E



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